

CLAIMS

1. A removable moving member for knitting having a base end portion and a front end portion, in which the base end portion can be mounted on and dismounted from travel means that travels along a needle bed of a weft knitting machine, and in which an operation of supporting to knit a fabric can be performed at the front end portion when the base end portion is mounted on the travel means, comprising:

hook means that is provided on the base end portion, and that can be switched between a hook state in which the hook means is hooked on the travel means and a non-hook state in which the hook means is not hooked on the travel means when mounted on the travel means; and

biasing means that is provided on the base end portion, and that biases with a spring such that a hook state of the hook means on the travel means is kept when mounted on the travel means,

wherein the hook means can be switched from the hook state to the non-hook state against a biasing force of the biasing means when a predetermined external force is applied.

2. The removable moving member for knitting of claim 1, wherein the hook means includes a pair of levers that intersect each other in a middle in a shape of an X, that can be swingingly displaced around an intersecting portion, that have one end

sides for hooking on the travel means, and that have other end sides for receiving the predetermined external force, and

the biasing means biases with a spring the pair of levers such that the one end sides move closer to each other.

3. The removable moving member for knitting of claim 2, wherein the biasing means has a wire-shaped or plate-shaped spring that is provided at a position closer to the one end sides of the levers with respect to the intersecting portion of the pair of levers of the hook means, and that has a middle portion curved using the intersecting portion as a supporting point such that both ends can move resiliently, and

the levers have pressing portions that are provided on portions on the other end sides with respect to the intersecting portion, that abut against the wire-shaped spring, and that receive the biasing force of the spring with a pressing force from the spring.

4. A weft knitting machine provided with a knitting member switching apparatus, comprising:

travel means that is provided with a holder on which the removable moving member for knitting according to any one of claims 1 to 3 can be mounted;

stopping means that is provided on a path on which the travel means travels, and that stops the removable moving member

for knitting;

switching means that is provided on the stopping means, and that can apply an external force for switching the hook means of the removable moving member for knitting between the hook state and the non-hook state; and

a knitting member switching apparatus for shifting to a state in which the removable moving member for knitting is stopped by the stopping means, by switching the base end portion to the non-hook state with respect to the holder, by applying an external force from the switching means to the hook means, when the travel means passes by the stopping means while the removable moving member for knitting is mounted as the knitting member on the holder, and for switching between keeping a state in which the removable moving member for knitting is stopped by the stopping means and shifting to the hook state in which the removable moving member for knitting is mounted on the holder of the travel means, by applying or not applying an external force from the switching means to the hook means, when the travel means passes by the stopping means while the removable moving member for knitting is stopped by the stopping means.

5. The weft knitting machine of claim 4, wherein the holder has a plurality of positions on which the removable moving member for knitting can be mounted, and

the knitting member switching apparatus mounts the

removable moving member for knitting on the holder by selecting one from the plurality of positions.

6. The weft knitting machine of claim 4 or 5, wherein the switching means includes:

a stopping control lever that projects from the stopping means to one side of a path on which the travel means travels such that the stopping control lever is along the path, that can be swingingly displaced around a supporting point provided on the other side on the path, and that can slidably abut against the other sides on the hook means when the travel means on which the removable moving member for knitting is mounted moves closer from the one side;

a biasing member for biasing the stopping control lever to a direction in which an external force for switching the hook means to the non-hook state is not applied;

a force receiving member that is provided at a position, away over the supporting point, on the other side on the path, and that swingingly displaces the stopping control lever in a direction in which the one side applies an external force for switching the hook means to the non-hook state, against a biasing force of the spring, when a pressing force is received while the holder that is provided on the travel means passes by; and

lever lock means that can lock a state in which the stopping

control lever is swingingly displaced with a pressing force to the force receiving member,

wherein the stopping means has a stopper portion that is provided on the other side on the path, and that allows the travel means to travel while preventing the removable moving member for knitting from moving.

7. The weft knitting machine of 4 or 5, wherein the switching means includes:

a stopping control lever that projects from the stopping means to one side of a path on which the travel means travels such that the stopping control lever is along the path, that can be swingingly displaced around a supporting point provided on the other side on the path, and that can slidably abut against the other sides on the hook means when the travel means on which the removable moving member for knitting is mounted moves closer from the one side; and

an actuator for switching the stopping control lever between a state in which an external force for switching the hook means to the non-hook state is not applied and a state in which the external force is applied,

wherein the stopping means has a stopper portion that is provided on the other side on the path, and that allows the travel means to travel while preventing the removable moving member for knitting from moving.

8. The weft knitting machine of claim 6 or 7, wherein the stopping means includes:

stopping stopper means for preventing the removable moving member for knitting from moving such that the removable moving member for knitting does not move together with the holder when the travel means lets the holder advance from the other side while the removable moving member for knitting is stopped, and for canceling the prevention when the holder passes by; and

a sensor for detecting whether or not there is the removable moving member for knitting at the position of the stopper portion.

9. The weft knitting machine of any one of claims 4 to 8, wherein, a plurality of removable moving members for knitting, a plurality of holders, and a plurality of stopping means are provided, and

the knitting member switching apparatus selectively mounts one or a plurality of removable moving members for knitting on the holders that are provided in correspondence with the selected removable moving members for knitting.

10. The weft knitting machine of any one of claims 4 to 9, wherein the removable moving member for knitting has a function

as the knitting member, as a yarn feeding port for feeding a knitting yarn to a knitting needle.

11. The weft knitting machine of any one of claims 4 to 10, wherein the travel means is a carriage that travels back and forth along a needle bed and that lets knitting needles arranged side by side on the needle bed perform a knitting operation.

12. The weft knitting machine of any one of claims 4 to 10, wherein the travel means travels on a path that is provided so as to face a side on which a fabric is knitted on the needle bed.

13. The weft knitting machine of any one of claims 4 to 12, wherein the stopping means, the switching means, and the knitting member switching apparatus can move.